## ABSTRACT OF THE DISCLOSURE

**[0061]** A multicontact electrode array suitable for implantation in living tissue includes a distal end having multiple spaced-apart ring or band electrode contacts carried on a flexible tube carrier. Each ring electrode contact is laser welded to a respective wire tip that has a multi-helix orientation on the inside of a separation tube. The center of the multi-helix wire defines a lumen wherein a positioning stylet, or other suitable positioning tool, may be removably inserted when the electrode array is implanted. The method of making the multicontact electrode array includes, as an initial step, winding lead wires around a suitable mandrel so as to form a multi-helix configuration. (Alternatively, the wire may be purchased in a multiwire pre-wound configuration that defines a lumen, in which case the mandrel is slipped inside the lumen.) Then, at a distal end of the electrode, each wire within the multi-helix winding is unwound so as to protrude out from the winding. Next, a non-conductive separation silicone tube which has a longitudinal slit along its length, is placed around the wound wires. Ring contacts are then placed over the silicone tube at a distal end of the electrode array and spaced apart as desired. These ring contacts also have a slit therein through which the protruding wire ends may exit. The silicone tube is used as a spacer to centrally locate the multi-helix wound wires with the ring contacts. A compressive die may be used to hold the pre-assembled ring contact, multi-helix wire, separation tube in their desired positions, and may be used to close the opening or slit of each ring contact through which the wire tips protrude. The wire tips are then individually trimmed to a suitable distance. A laser welding process may then be used to bond each lead wire to a corresponding ring contact. Finally, the preassembled electrode array is placed in a molding die, and a polymer filler is injected into the internal gaps of the electrode array components.